

Statement of  
M. Theresa Coutu, C.M.  
Government Affairs Director, InVision Technologies, Inc.  
House Transportation and Infrastructure Committee  
Subcommittee on Aviation  
July 14, 2004

I'd like to thank you, Mr. Chairman, Congressman DeFazio and Members of the Subcommittee for this opportunity to discuss the benefits of automating the checked baggage screening at our nation's airports with inline Explosive Detection Systems (EDS). Securing our commercial aviation system remains a high national priority. We have experienced first-hand the devastating effects that inadequate security can bring. It must, however, be done in a cost-effective manner. Today I will discuss the economic justification for inline EDS screening; the need for adequate funding; additional benefits of inline EDS and thoughts on how to accelerate achieving our goal of protecting the flying public and the aviation industry.

**Background**

Following the tragedy of Pan Am 103 in 1988 and the subsequent Aviation Security Act of 1990, InVision Technologies Inc. was formed in September 1990. The company's mission was to meet the elevated challenge of aviation security and the application of computed tomography (CT) technology to baggage screening. As a small, commercial company, InVision developed the first EDS certified in 1994. In the 10 years following this major achievement, InVision has developed a family of products to meet the variety of needs at airports. We now offer four EDS solutions including the newest, smaller CTX 1000, which has just received certification. We'll soon be adding a fifth, unique product with the Yxlon diffraction x-ray system that has just completed certification testing. Ten years from the first EDS certification, InVision is adding a powerful, new technology to the war on terrorism by combining CT with diffraction x-ray screening in a system-of-systems designed to optimize automation, efficiency and security.

InVision has made substantial improvements to its products over this ten-year period, largely self-financed. Lower false alarm rates, higher throughputs and increased reliability have been achieved on a continuing basis. Features such as Multiplexing (MUX) and Remote Image Replay (RIR), that were made possible by networking the equipment, have also provided impressive progress in process efficiency and cost savings. At airports such as San Francisco and Jacksonville, which have MUX and RIR, staffing requirements are decreased by as much as 70%. These efforts are ongoing and will likely escalate with the upcoming infusion of additional resources as we merge with General Electric.

### **The Business Case for Inline EDS**

Working closely with airports that have inline CTX baggage screening, InVision has analyzed the cost savings and other benefits of such systems. As expected, these are substantial and produce models worth deploying at other airports. Not all airports are viable candidates for full inline systems; however, it does make sense for many airports and for the federal government.

Our modeling for Large Hub airport baggage screening operations, defined as an average 5000 bag per hour peak, shows that a \$57 Million dollar capital investment will result in a \$20 Million dollars per year savings in operational expense. This analysis compares inline EDS to a standalone type EDS screening operation currently conducted in ticketing lobbies. The savings are primarily in labor related costs. If one were to compare inline EDS to using Electronic Trace Detection (ETD) for checked baggage screening in this model, the operational cost savings becomes an astronomical \$70 Million dollars per year at a Large Hub size airport. Although no one supports full ETD checked baggage screening at this size airport, TSA frequently relies on trace detection to varying degrees due to the inefficiencies inherent in lobby area EDS screening.

Each airport is unique; therefore, modeling alone does not allow us to confidently

extrapolate system costs. To obtain a valid projection of capital requirements, it is better to use actual airport cost estimates. Since not every airport will be a candidate for full inline baggage screening systems, it is also more appropriate to limit discussions to the ones that are. Based on survey data gathered by the airport associations, it is estimated that the first sixty-four airports identified as benefiting from such an inline system, would require \$4 Billion in infrastructure capital from the federal government. Adding in new equipment costs, we estimate a total need of nearly \$5 Billion. Although the larger airports require a larger investment, the operational savings are also greater, resulting in an estimated annual operational savings of \$1 Billion dollars.

San Francisco's latest inline project provides a real life example. The airport spent \$16 Million in infrastructure costs to install 11 CTX 9000 EDS machines in Terminal T-3. This Terminal houses United Airlines domestic operation, handling over a third of the airport's total checked baggage. This investment resulted in a reduction of over 70 TSA FTEs required to handle checked bag screening.

Payback on the infrastructure investment required to provide inline systems to Small Hub size airports would be less than one year. Capital investment is minimized through reuse of existing EDS equipment. The federal government owns close to 500 CTX 5500 EDS machines, which can be relocated and reused for inline projects at the Small Hub airports. When currently funded projects at airports such as Dallas-Ft Worth and Atlanta's Hartsfield come online, these valuable EDS assets will become immediately available for use at other facilities. There are enough machines in existing inventory today to cover all the Small Hub airports without investing any additional dollars in equipment. There would even be machines left over for break cargo, rail or other screening applications.

Leigh Fisher, a well-established aviation industry consultant, has independently analyzed the checked baggage screening options. They reported their findings at AAAE's annual conference this June. For the mid-range of airports, they

found that the most cost effective solution is a small EDS inline system, something they have termed "Inline Lite". Their analysis shows that inline EDS is appropriate even for airports originally considered too small to warrant such systems.

An additional consideration and benefit of inline EDS screening, is the reduction of on-the-job injuries. It has been widely reported that TSA is experiencing one of, if not the, highest level of workman's compensation claims in the federal government. Automating bag handling with inline EDS systems will dramatically decrease this problem.

### **Creative Financing**

Public support wanes as time passes following a major security event. When this happens, competing needs often jeopardize security funding. Relying on the annual appropriations process for the federal government to fund inline EDS projects is problematic for airports and their communities. Delays and funding uncertainty result in excessive construction and redesign costs, as well as added complexity in executing capital improvement programs.

Congress and the industry, led by AAAE and ACI-NA, recognized the extreme challenge of financing the large capital expenditures required to install explosive detection systems in even the largest U.S. airports. The Letter of Intent Program (LOI) was an excellent first step in ensuring that airports would receive the necessary capital funds. This Program did not address, however, the fact that substantial funds would be needed in a relatively short timeframe. This has resulted in a funding shortfall. TSA has announced that no new LOIs will be issued in fiscal year 2005. Only eight LOIs have been issued to date, covering only nine of the 429 certified airports.

Other government capital programs and almost all major investments by private industry, utilize longer term financing options to meet their needs. It is unusual

and unnecessary to require up front funding from DHS annual appropriations of both EDS equipment procurement and EDS installation by airports (with LOI reimbursement). Financing options must be explored as a method of solving these funding problems.

Two examples of using long-term financing demonstrate the type of savings possible. Assumptions used:

1. Private sector capital utilized
2. Government repayment using annually appropriated funds
3. A 7-year financing term
4. A 10-year useful life for EDS equipment

Applying a financing plan as described above to our Large Hub airport model, we can cover debt on the \$57 Million dollars over 7 years with an approximate annual repayment obligation of \$10 Million. The corresponding annual operational savings realized in the first year and each year of the 7-year financing term is \$20 Million dollars. The resulting \$10 Million per year in net savings begins in Year 1 and continues for the 7-year term of the financing. After completion of the 7-year financing term, the annual net savings would be \$20 Million for the balance of the useful life of the assets. Total savings over a 10-year period to the federal government for financing an inline EDS system versus retaining its standalone EDS lobby screening operation is \$130 Million dollars.

If we look at the project in total, it is estimated that a capital investment of \$5 Billion dollars is needed to fund both infrastructure and equipment to fully implement the inline EDS solution. Full deployment of inline EDS can result in annual operational savings of \$1 Billion per year. For analysis purposes, if we were able to have a common financing start date for all airports requiring inline EDS, the operational savings applied to repayment coupled with \$500 Million per year authorized by Congress for construction of inline EDS would result in a

payback period of less than 4 years, at which point the annual saving to the Government would be \$1 Billion dollars net per year.

### **Security Considerations**

Crowded ticketing lobbies are an attractive and vulnerable target for terrorists and other criminals. Moving baggage screening away from this area is prudent in order to mitigate this risk. Inline screening also minimizes the potential for serious operational impacts. Evacuating a ticketing area to resolve an unknown threat wreaks havoc on timely ticketing, boarding and aircraft departure. Even an hour delay at one airport can cost millions of dollars and produce a ripple effect in operational impact through the aviation system.

### **The Future**

Although great strides were made over the last decade in EDS performance, we anticipate that improvements and breakthroughs will escalate based on the existence of a real market need for better solutions. With GE's entry into the aviation security arena, a substantial increase in resources, including technological expertise, will become available to apply to R&D efforts to advance the state of the art.

As the aviation industry continues its trend toward technology-driven automation critical to cutting expenses and improving efficiency, TSA must do the same.

The airlines and airports are moving rapidly towards automating all of passenger processing, from printing boarding passes on home computers to common-use, self-serve kiosks. Processes that are expensive, labor-intensive or even simply frustrating for the customer cannot be supported in such an economically sensitive industry.

The future of checked bag screening, as well as screening of passengers, carry-on bags and cargo, must rely on automation. Not only does automation save life-cycle screening costs, it greatly improves the ultimate security of the system by

minimizing the human factor. Removing the human factor will also minimize bag openings. One of the most originally attractive benefits of EDS was its ability to perform non-intrusive detection. Coupled with x-ray diffraction technology, the need to open bags, and associated opportunities for misplaced bag contents, can be achieved. This weak link must be strengthened if we are to achieve real security in the aviation system. Something as inexpensive and simple to install as RIR is estimated to be saving San Francisco airport's security operation over \$4 Million dollars a year in labor and consumables. This is the direction in which we must continue.

### **Summary**

Inline EDS makes sense from a security, economic and operational perspective. We must continue to increase the efficiency of the system through technological advancements and flexible system designs. We must also explore financing options to accelerate the availability of funding for this much-needed investment in the safety and security of our nation's aviation system and the flying public.